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# PROJECT CHECO SOUTHEAST ASIA REPORT

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## SEARCH AND RESCUE OPERATIONS IN SEA 1 April 1972 - 30 June 1973(U)

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Date: 8-15-06

# **SEARCH AND RESCUE OPERATIONS IN SEA**

## **1 April 1972 - 30 June 1973(U)**

**27 NOVEMBER 1974**

**CHECO/CORONA HARVEST DIVISION  
OPERATIONS ANALYSIS OFFICE  
HQ PACAF**

**Prepared by:**

**CAPT DAVID G. FRANCIS and MAJ DAVID R. NELSON**  
**Project CHECO 7th AF**

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PROJECT CHECO REPORTS

The counterinsurgency and unconventional warfare environment of Southeast Asia has resulted in USAF airpower being employed to meet a multitude of requirements. These varied applications have involved the full spectrum of USAF aerospace vehicles, support equipment, and manpower. As a result, operational data and experiences have accumulated which should be collected, documented, and analyzed for current and future impact upon USAF policies, concepts, and doctrine.

Fortunately, the value of collecting and documenting our SEA experiences was recognized at an early date. In 1962, Hq USAF directed CINCPACAF to establish an activity which would provide timely and analytical studies of USAF combat operations in SEA and would be primarily responsive to Air Staff requirements and direction.

Project CHECO, an acronym for Contemporary Historical Examination of Current Operations, was established to meet the Air Staff directive. Based on the policy guidance of the Office of Air Force History and managed by Hq PACAF, with elements in Southeast Asia, Project CHECO provides a scholarly "on-going" historical examination, documentation, and reporting on USAF policies, concepts, and doctrine in PACOM. This CHECO report is part of the overall documentation and examination which is being accomplished. It is an authentic source for an assessment of the effectiveness of USAF airpower in PACOM when used in proper context. The reader must view the study in relation to the events and circumstances at the time of its preparation--recognizing that it was prepared on a contemporary basis which restricted perspective and that the author's research was limited to records available within his local headquarters area.

*Robert E. Hiller*

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Assistant for Operations Analysis  
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iii

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(12) AFXOXAA . . . . . 6

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 (h) 316TAW(DOX) . . . 1  
 (i) 317TAW(DOI) . . . 1  
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 (k) 463TAW(DOX) . . . 1  
 (l) 58TAC FTR TNG  
 WG . . . . . 1  
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 (d) 60MAWG(DOI) . . . 1

### (2) MAC SERVICES

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## d. ADC

### (1) HEADQUARTERS

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### (2) AIR DIVISIONS

(a) 25AD(DOI) . . . . . 1

## e. ATC

(1) DOSPI . . . . . 1

## f. AFSC

### (1) HEADQUARTERS

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 (b) SDA . . . . . 1  
 (c) HO . . . . . 1  
 (d) ASD(RWST) . . . . . 1  
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2. XP . . . . 1

3. DO . . . . 1

(b) T3AF(CSH) . . . 1

(c) 7AF/OLAA(CHECO) 2

## (3) AIR DIVISIONS

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(b) 314AD(XP) . . 1

(c) 327AD(IN) . . 1

## (4) WINGS

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(b) 56SOW(WHD) . . 1

(c) 388TFW(DO) . . 1

(d) 405TFW(DOI) . . 1

(e) 432TRW(DOI) . . 1

## j. CINCUSAFE

### (1) HEADQUARTERS

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(b) DOLO . . . . . 1

(c) DOOW . . . . . 1

(d) XP . . . . . 1

### (2) AIR FORCES

(a) 3AF(DO) . . . 1

(b) 16AF(DO) . . . 1

### (3) WINGS

(a) 401TFW(DCOI) . 1

(b) 513TAW(DOI) . 1

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m.	Senior USAF Rep, U.S. Army Armor School, Comd and Staff Dept	1

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## TABLE OF CONTENTS (U)

	<u>Page</u>
LIST OF FIGURES . . . . .	x
FOREWORD . . . . .	xi
CHAPTERS	
I. MISSION AND ORGANIZATION . . . . .	1
Mission . . . . .	1
Organization . . . . .	1
Units and Responsibilities . . . . .	5
Organizational Summary . . . . .	11
II. AIRCRAFT AND SUBSYSTEMS . . . . .	13
HH-53 . . . . .	13
HH-53 Subsystems . . . . .	13
HH-43 . . . . .	17
HC-130P . . . . .	19
HC-130P Subsystems . . . . .	19
RESCORT and FAC Aircraft . . . . .	21
Rescue Combat Air Patrol (RESCAP) Aircraft . . . . .	26
III. PERSONNEL . . . . .	28
Manning . . . . .	28
Training . . . . .	28
Awards and Decorations . . . . .	31
IV. OPERATIONS . . . . .	32
SAR Alert Posture . . . . .	32
Responsibilities . . . . .	32
Procedures . . . . .	34
First Light SAR Effort . . . . .	36
Survivor Procedures . . . . .	36
Radio Communications . . . . .	37
Accomplishments . . . . .	38
Mission Narratives . . . . .	38

UNCLASSIFIED

	<u>Page</u>
V. CONCLUSION . . . . .	50
Future Requirements . . . . .	51
Future Considerations . . . . .	52
FOOTNOTES . . . . .	53
GLOSSARY . . . . .	61



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## LIST OF FIGURES (U)

<u>Figure Number</u>	<u>Page</u>
1. 3rd ARRGp Organizational Structure, 1 April 1972 . . . . .	3
2. 3rd ARRGp Organizational Units, as of 1 April 1972 . . . . .	4
3. SAR Organizational Structure, 30 June 1973 . . . . .	7
4. SAR Organizational Units, as of 30 June 1973 . . . . .	8
5. HH-53 Jolly Green . . . . .	14
6. HH-43 Pedro . . . . .	18
7. HC-130P King . . . . .	20
8. A-1 Sandy and HH-53 . . . . .	23
9. A-7D Sandy . . . . .	24
10. OV-10 Bronco . . . . .	27

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FOREWORD (U)

(U) This is the seventh and final report on Search and Rescue (SAR) written by the Southeast Asia (SEA) CHECO office. This continuation updates earlier SAR reports by documenting significant events that occurred from 1 April 1972 to 30 June 1973. For ease of reading, some material on organization, mission, and systems is repeated from previous reports.

(S) The story of any activity includes both successes and failures. This is especially true of SAR because of the unusual pressures and circumstances of the SAR mission. The USAF can profit from an understanding of both the accomplishments and the shortcomings of SAR operations. Colonel Cecil N. Muirhead, Commander of the 3d Aerospace Rescue and Recovery Group (ARRGp) from 14 January 1972 to 9 January 1973, emphasized the importance of continuing efforts to improve the already <sup>1</sup>enviable SAR record when he stated:

(S) While our successes have been marvelous, an organization that rests on its laurels cannot continue to enjoy that position. We must continue to strive for improvement and to cement any holes that might develop in our procedures. . . . The challenge to accomplish a goal of 100% recovery is there; we are dedicated to attempt reaching that goal.

(U) At the beginning of the 15-month period covered by this report, U.S. air resources were redeployed to SEA and air activity surged to high levels. Heaviest U.S. air involvement occurred during the responses to the North Vietnamese 1972 Spring Offensive (April-June 1972) and LINEBACKER II (December 1972). A winding down of U.S. SEA involvement also occurred during this period. On 28 January 1973, the Vietnam cease-fire began, and

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the formal documents were signed on 30 January 1973. In conjunction with the cease-fire, the U.S. withdrew all forces from the Republic of Vietnam (RVN); however, U.S. forces continued to operate from bases in Thailand. From 1 April 1972 to 30 June 1973, the men of the Aerospace Rescue and Recovery Service (ARRSO) performed their mission with professionalism and pride. These men truly lived up to their code--"that others may live."

xii

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## CHAPTER I

### MISSION AND ORGANIZATION (U)

(U) During the time period covered by this report, 1 April 1972 through 30 June 1973, the mission of the SAR units in SEA did not change. Nevertheless, SAR units underwent substantial changes through relocations and inactivations as U.S. force strength fluctuated in SEA.

#### Mission (U)

(S) Essentially, the mission of Search and Rescue is to save lives through the ability to search for and recover downed personnel in friendly or hostile environments.<sup>2</sup> In SEA, SAR resources consisted of primary rescue forces and secondary rescue resources. Primary rescue forces were those specifically equipped and trained to perform the SAR mission. Secondary resources were those military and civilian forces which had an inherent SAR capability but whose specific mission was other than SAR.<sup>3</sup> The physical area of operations was approximately 1.1 million square miles which included North Vietnam (NVN), South Vietnam (SVN), Cambodia, Laos, Thailand, and the Gulf of Siam. The U.S. Navy had responsibility for rescue operations in the Gulf of Tonkin and in that portion of NVN within 5 miles of the shoreline.<sup>4</sup>

#### Organization (U)

(U) The Military Airlift Command (MAC) was responsible for SAR activity world-wide. Administrative control over the Pacific region was vested in the 41st Aerospace Rescue and Recovery Wing (ARRWg) at

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Hickam Air Force Base (AFB), Hawaii. The Commander, Seventh Air Force, had operational control of USAF rescue-capable resources and designated the Commander, 3d ARRGp, as the executive agent for SAR, thus making the 3d ARRGp responsible for the SAR mission in SEA. The Commander, 3d ARRGp, reported to both Seventh Air Force and the 41st ARRWg. In addition to advising Seventh Air Force on all matters pertaining to SAR activity in SEA, he was responsible for maintaining operational equipment and providing personnel to perform the SAR role.

(U) The primary rescue forces were under the 3d ARRGp. On 1 April 1972, these forces consisted of the following:

<u>Unit</u>	<u>Location</u>
Joint Rescue Coordination Center	Tan Son Nhut Air Base (AB), RVN
Rescue Coordination Center-Operating Location (OL)-B	Udorn Royal Thai Air Force Base (RTAFB), Thailand
Rescue Coordination Center-OL-A	Son Tra AB, RVN
37th Aerospace Rescue and Recovery Squadron (ARRSq)	Da Nang AFB, RVN
40th ARRSq	Nakhon Phanom (NKP) RTAFB, Thailand
Detachment (Det) 3	Ubon RTAFB, Thailand
Detachment 4	Korat RTAFB, Thailand
Detachment 5	Udorn RTAFB, Thailand
Detachment 12	U-Tapao Royal Thai Naval Base, Thailand
Detachment 14	Tan Son Nhut AB, RVN

(An organizational chart and the geographical locations of the 3d ARRGp as of 1 April 1972 are shown in Figures 1 and 2.)

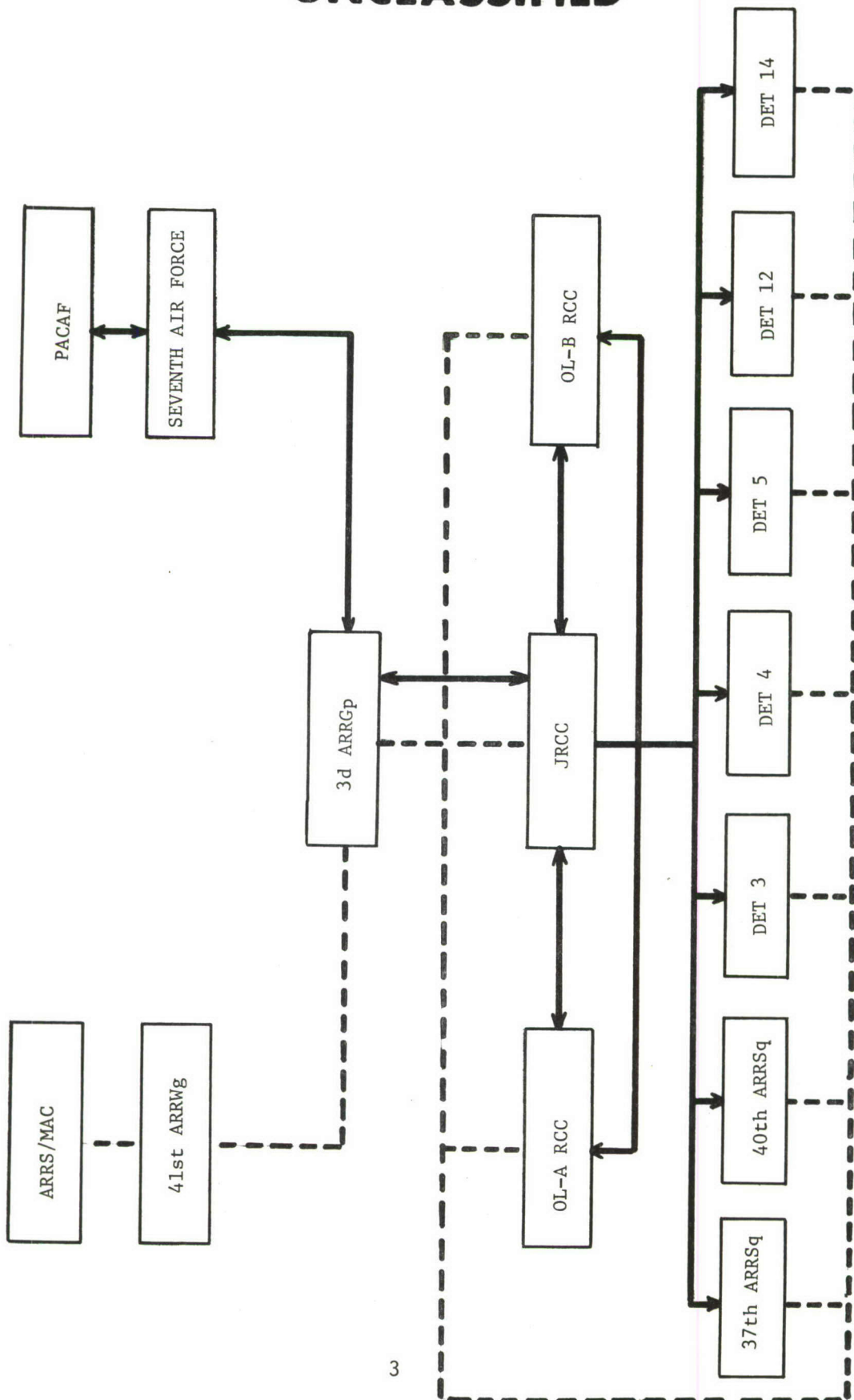
(U) The continuing reduction of U.S. forces in SEA prompted a streamlining of the organization of SAR forces. On 20 August 1972, the 37th ARRSq,

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↔ OPERATIONAL CONTROL FUNCTIONS  
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# 3rd ARRGp ORGANIZATIONAL STRUCTURE 1 APRIL 1972

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Figure 1

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# **3rd ARR GP ORGANIZATIONAL UNITS AS OF 1 APRIL 1972**

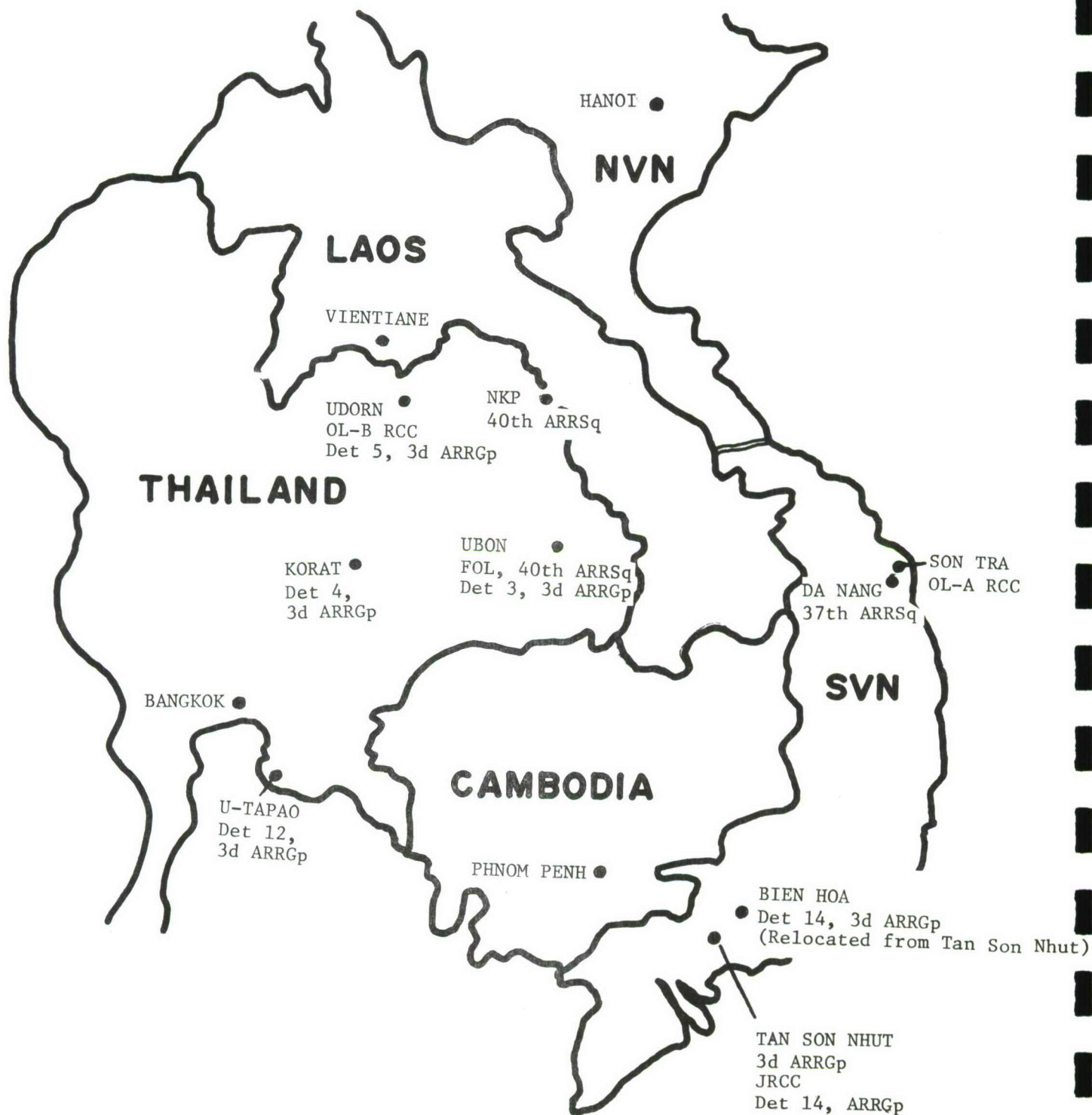


Figure 2

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40th ARRSq, 56th ARRSq, Detachment 14, and 3d ARRGp came under the command and technical control of the 41st ARRWg. Dets 3, 5, and 12<sup>9</sup> of the 3d ARRGp were redesignated Dets 3, 5, and 12 of 40th ARRSq. Det 14 was placed under the 40th ARRSq at the end of August 1972. Subsequently, additional units were inactivated or moved. Each of these actions will be discussed in more detail in the units and responsibilities section of this report. (See pages 5-11.) As of 30 June 1973, the dis-<sup>10</sup>position of SAR forces in SEA was as follows:

<u>Unit</u>	<u>Location</u>
Joint Rescue Coordination Center (JROC)	NKP RTAFB, Thailand
3d ARRGp	NKP RTAFB, Thailand
56th ARRSq	Korat RTAFB, Thailand
40th ARRSq	NKP RTAFB, Thailand
Det 3	Ubon RTAFB, Thailand
Det 5	Udorn RTAFB, Thailand
Det 10	Takhli RTAFB, Thailand
Det 12	U-Tapao RTAFB, Thailand

(An organizational chart and the geographical locations of SAR forces as of 30 June 1973 are presented in Figure 3 and 4.)

#### Units and Responsibilities (U)

(S) Joint Rescue Coordination Center. The Joint Rescue Coordination Center provided command and control for SAR missions and was manned by 3d ARRGp personnel. The JRCC (call sign Joker) was responsible for launching SAR forces, coordinating with Blue Chip\* for tactical air support, planning various phases of the SAR mission such as ingress/egress

\*Blue Chip--Seventh Air Force Tactical Air Control Center.

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routes, and relaying intelligence to aircraft involved in a SAR effort. The JRCC had complete radio facilities for communication with SAR aircraft including high frequency (HF), very high frequency (VHF), ultra<sup>11</sup> high frequency (UHF), and frequency modulated (FM) radios.

(S) The JRCC was collocated with Blue Chip at Tan Son Nhut AB, RVN, until 15 February 1973. On that date Military Assistance Command Vietnam (MACV)/Seventh Air Force was inactivated and the U.S. Support Activities Group (USSAG)/Seventh Air Force was established at NKP RTAFB, Thailand. Blue Chip moved to USSAG headquarters at NKP and Joker moved to a Tactical<sup>12</sup> Unit Operations Center (TUOC) also at NKP. Located adjacent to the TUOC was the 3d ARRGp headquarters, the 40th ARRSq, the 56th Special Operations Wing (SOW), and Detachment 25 of the 10th Weather Squadron. During a SAR mission, Joker maintained continuous contact with intelligence, weather, search and rescue coordinators from 40th ARRSq and the 56th SOW, and additional personnel from these or other units as required. Also, the JRCC<sup>13</sup> would send one officer and one NCO to Blue Chip for coordination purposes.

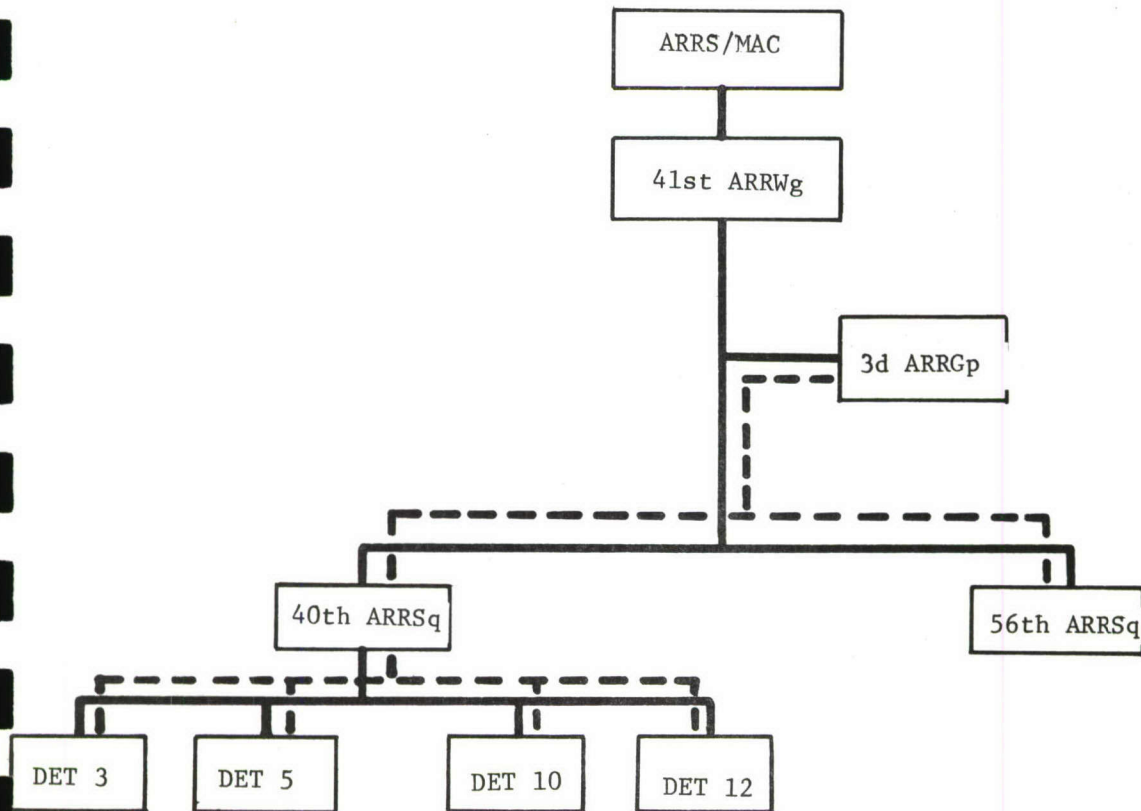
(S) Rescue Control Center (RCC) - Queen. Operating Location-A at Son Tra (call sign Queen) was responsible for SAR operations in the Da Nang<sup>14</sup> Sector until 18 June 1972. This sector was defined as the land area bounded by 1800N, 10600E, 1400N (minus the northeast portion of Cambodia), and<sup>15</sup> adjacent water within the Saigon Flight Information Region. After delegating mission control to Queen, Joker assumed a monitoring role except for coordination with Blue Chip. On 18 June 1972, the 3d ARRGp inactivated<sup>16</sup> Queen as part of the withdrawal policy.

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# SAR ORGANIZATIONAL STRUCTURE 30 JUNE 1973



—— Command Channels  
- - - Operational Control Channels

Figure 3

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**SAR ORGANIZATIONAL UNITS**

**AS OF 30 JUNE 1973**

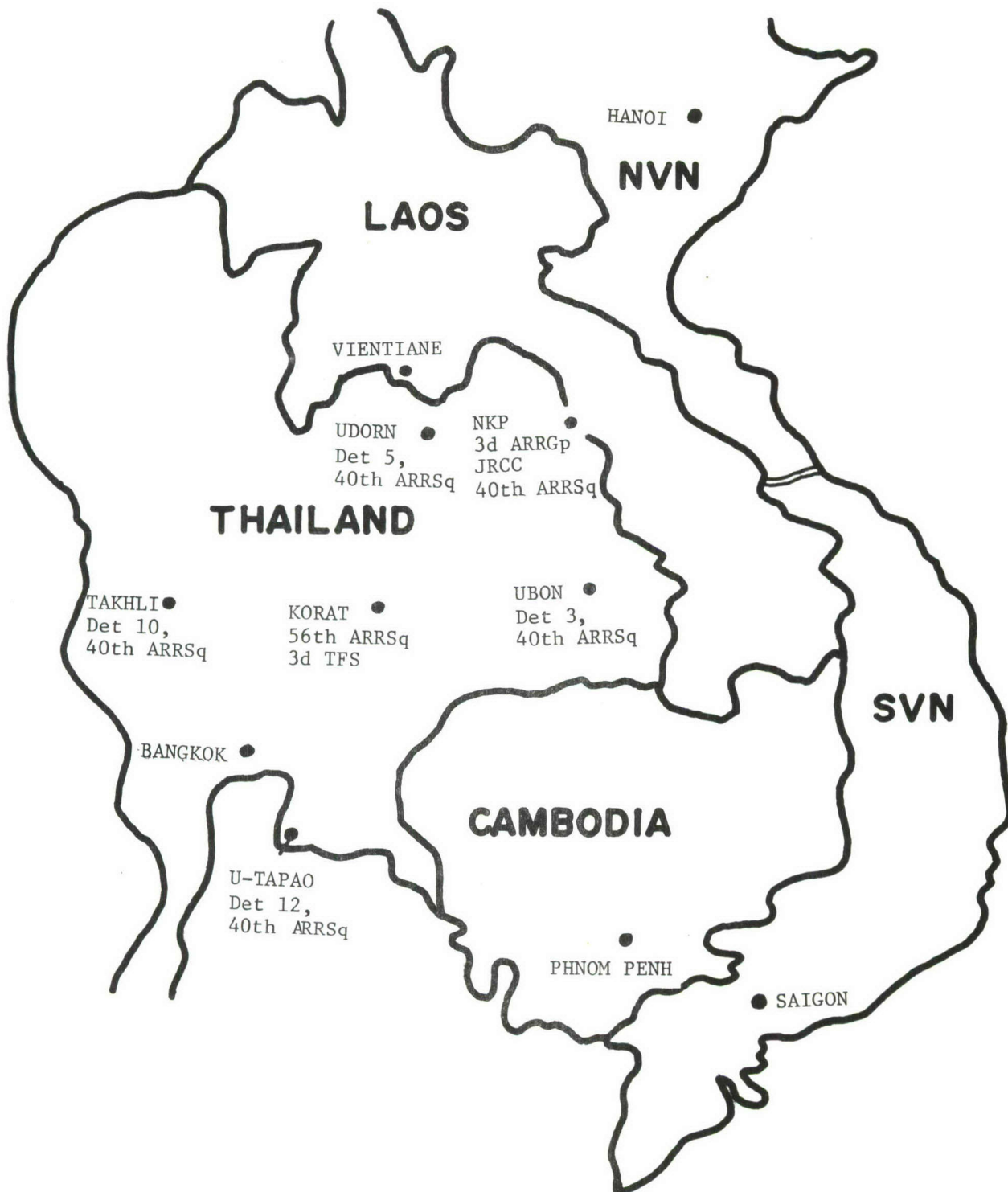


Figure 4  
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(S) Rescue Control Center - Jack. The area of responsibility for OL-B, Udorn RTAFB, Thailand (call sign Jack) was the Udorn SAR Sector. This sector was defined as the land area for all of Thailand, all of Laos west of 106°00'E, and most of North Vietnam. The responsibilities of Jack<sup>17</sup> were the same as Queen's.<sup>18</sup> On 18 June 1972, Jack was moved to NKP<sup>18</sup> and<sup>19</sup> was inactivated on 15 February 1973 concurrent with Joker's move to NKP.

(S) Local Base Rescue Detachments. The primary mission of these detachments was to perform local base rescue (LBR) within a 75 nautical mile (NM) radius of the host base. Each Det had two HH-43 Pedro helicopters<sup>20</sup> and maintained a 24-hour ground alert. The Pedros were primarily used in a non-hostile environment, but these helicopters were available for combat rescue if needed.<sup>21</sup> All detachments discussed below were placed<sup>22</sup> under the 40th ARRSq on 20 August 1972.

(S) Det 3 at Ubon RTAFB, Det 5 at Udorn RTAFB, and Det 12 at U-Tapao RTAFB continued to operate as in the past with the command and control exceptions as noted above. Det 8 was established at Takhli RTAFB on 10 May 1972 as a provisional LBR unit to support the increased air activity<sup>23</sup> resulting from the North Vietnamese Army (NVA) invasion. This unit retained its Continental U.S. (CONUS) designator of Det 8, 43 ARRSq, 39 ARRWg. Det 8 was later redesignated Det 10, 40 ARRSq, and became a permanent LBR unit. As part of the U.S. withdrawal from RVN, Detachment<sup>24</sup> 14, Tan Son Nhut AB, RVN, was inactivated on 10 February 1973.

(S) 37th ARRSq. The 37th ARRSq equipped with HH-43 and HH-53 helicopters performed both the LBR mission and the long range SAR mission.

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They maintained a ground alert posture at Da Nang AB, RVN, and airborne alert orbit points as dictated by the 3d ARRGp.<sup>25</sup> On 30 November 1972, the 37th ARRSq was inactivated. The LBR portion of the squadron was designated Detachment 7 and remained at Da Nang as an LBR unit.<sup>26</sup> Detachment 7 was inactivated on 10 February 1973.<sup>27</sup>

(S) 40th ARRSq. The 40th ARRSq also performed LBR and long range rescue using three HH-43 Pedro helicopters and 10 HH-53 Jolly Green helicopters. Operating from Nakhon Phanom RTAFB, the 40th ARRSq maintained ground and airborne alert as directed by the 3d ARRGp. The 41st ARRWg designated this squadron as LBR manager making it responsible for all LBR detachments. The 40th ARRSq was also responsible for operating RCC Jack from 18 June 1972 to 15 February 1973.<sup>28</sup>

(S) 56th ARRSq.<sup>29</sup> On 8 July 1972, Det 4, Korat RTAFB, was designated the 56th ARRSq. The 56th ARRSq had the HC-130P (call sign King) aircraft and the HH-43 Pedro helicopter. The Pedro performed the LBR mission and King was the Airborne Mission Commander (AMC) aircraft. The 56th ARRSq maintained the AMC alert status as directed by the 3d ARRGp. Typically, this meant one aircraft (King 21) on airborne alert during daylight hours and one aircraft (King 27) on ground alert 24 hours a day. King 27 was used as an alert tanker for the Jolly Greens and as a back-up for King 21. The 56th ARRSq kept a third aircraft (King 22) available for contingencies. King 22 provided medical evacuation or other special operations as required by Seventh Air Force. The Pedro aircraft were kept on 24-hour ground alert.<sup>30</sup>

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(S) 3d Tactical Fighter Squadron (TFS). Although not directly responsible to the 3d ARRGp, the 3d TFS provided A-7 rescue Escort (RESCORT) aircraft for SAR missions beginning in November 1972.<sup>31</sup> (See the A-7 in the RESCORT role, pages 21-25.) The 3d TFS was originally the 355th TFS of the 354th Tactical Fighter Wing (TFW) at Korat RTAFB. The 3d TFS was initially established on a temporary duty (TDY) basis, but on 15 March 1973, the 388th TFW established the 3d TFS as a permanent unit at Korat.<sup>32</sup> The mission of the 3d TFS was to support SAR with Sandy RESCORT aircraft and to conduct special operations.<sup>33</sup> At first, the 3d TFS kept two flights of three A-7 aircraft on daytime ground alert. Later, when most of the air operations were conducted in the lower threat environment of Cambodia, which required only two A-7 aircraft to escort each Jolly Green, the 3d TFS kept two flights of two aircraft on daytime ground alert. Because the A-7 was not used during night SAR missions, no aircraft were kept on alert after dark.<sup>34</sup>

#### Organizational Summary (U)

(S) By 15 February 1973, the SAR forces had undergone significant organizational changes, realignments, and redeployments of SAR forces.<sup>35</sup> According to Colonel Herbert R. Zehnder, 3d ARRGp Commander:

(S) The changes that took place really didn't affect the SAR mission. We still had the same mission, the same job. We were just doing it more effectively with fewer people.

(S) Lt Col Sniegowski, 3d ARRGp Plans Officer, commented further:<sup>36</sup> (U)

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(S) When the 3d Group was down at Tan Son Nhut, you had the JRCC, Joint Rescue Coordination Center, there and you had the Rescue Coordination Center here at NKP, as part of the 40th Squadron. You had effectively two levels of command and control. The nuts and bolts of the mission operations were conducted out of NKP, and the JRCC at Tan Son Nhut maintained executive control and also accomplished coordination for additional fire power, RESCORT, or RESCAP [Rescue Combat Air Patrol] aircraft. With the relocation of the Group here at NKP, we did away with one of those levels, and the 40th RCC is no longer. The JRCC now runs the whole ball of wax. From that standpoint you probably have a more efficient and more effective operation than when we had the two locations here and at Tan Son Nhut.

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## CHAPTER II

### AIRCRAFT AND SUBSYSTEMS (U)

#### HH-53 (U)

(U) The primary rescue aircraft in SEA continued to be the HH-53C helicopter--the familiar Jolly Green. The crew complement, performance characteristics, radius of operation, and basic equipment for the HH-53 remained unchanged. However, several specialized systems designed to significantly improve the HH-53's SAR capability became operational during this time.

#### HH-53 Subsystems

(C) Night Recovery System (NRS). The NRS, also called the Limited Night Recovery System (LNRS), or Pave Imp, was designed to recover downed airmen at night and during conditions of low visibility. The need for a night recovery system was first detailed in Southeast Asia Operational Requirement (SEAOR) #114, dated 3 April 1967,<sup>37</sup> which was later changed to Combat Required Operational Capability (CROC) 11-70. The project was declared complete on 23 May 1971,<sup>38</sup> but the system was more restricted than had been originally envisioned. The system that evolved was the LNRS, or Pave Imp. This system consisted of a Low-Light-Level Television, a door-mounted Night Observation Device, special goggles to improve the crew's night vision, and an automatic approach and hover capability. The system could only be used under limited conditions: a permissive environment,<sup>39</sup> flat terrain, and Visual Meteorological Conditions. Acceptance of the Pave Imp vacillated during July-September 1971. Seventh Air Force

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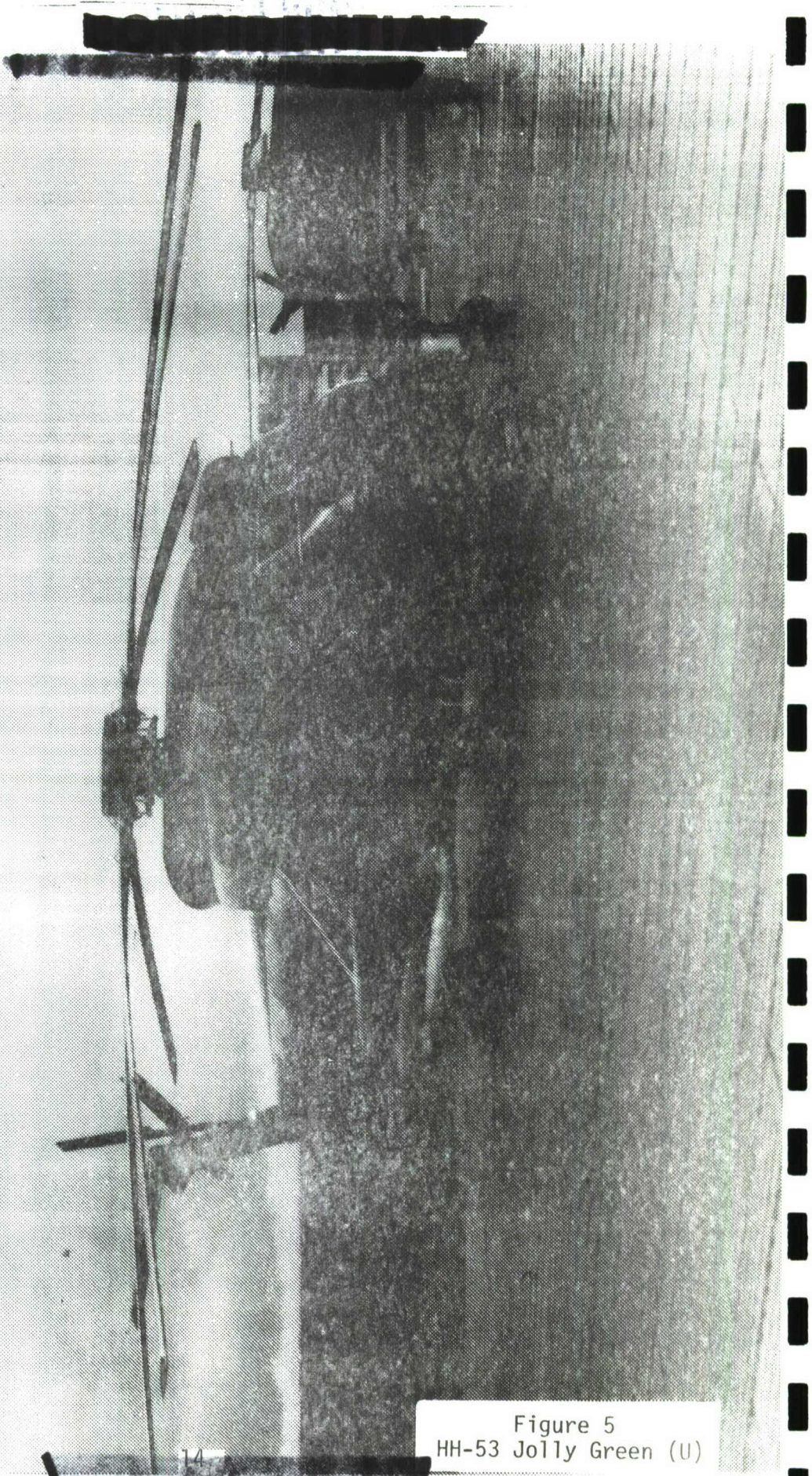


Figure 5  
HH-53 Jolly Green (U)

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wanted to withdraw the system, while MAC/ARRS desired to keep it. 40

Finally, in September 1971, an agreement was reached to retain the Pave  
41 Imp. Primarily due to its restrictive employment conditions, it was

not used until 21 December 1972 when the first successful night combat  
rescue was achieved with the recovery of the Spectre 17 (AC-130 Gunship)  
42 aircrew in Laos.

(C) Electronic Location Finder (ELF). The need to determine the  
precise location of downed aircrew members was fundamental to improving  
both the night recovery system and the overall SAR capability. MAC  
Required Operational Capability (ROC) #27-70, dated 16 November 1970,  
stated the need to locate and expeditiously hover over a survivor in a  
43 combat environment.

(C) The ELF proved to be the system that most closely approximated  
the ROC requirements. The system consisted of two identical, inter-  
changeable radio receivers on board the helicopter. These radio receivers  
operated on two fixed-tuned channels: 243.0 or 282.8 megahertz, as  
selected on the ELF control unit. The receivers operated with fore/aft  
and left/right antenna pairs and, by converting received signals, indi-  
cated whether the signal source of the downed crew member was forward or  
aft of the helicopter as well as left or right. This fore/aft, left/right  
information was visually displayed on a course deviation indicator. This  
visual display enabled the pilot to fly an approach to the downed airmen  
similar to the procedures used in flying an instrument landing approach.

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The ground portion of the system consisted of the downed airman and his survival radio to transmit signals to the helicopter. Under ideal conditions the range of the system was 142 NM, but in jungle or mountainous terrain the range was reduced to 2 or 3 NM. The system's accuracy, which was better than that attained by UHF-DF\* homing, was within one degree of heading.

(C) The first ELF checkout flight in SEA was flown on 12 May 1972. On 1 and 2 June 1972 an ELF equipped HH-53 successfully recovered a downed aircrew member in North Vietnam. The Jolly Green received accurate bearing information at a range of 40 NM, and the ELF system was instrumental in the recovery. ELF was used frequently, and installation in all HH-53 aircraft was completed by 17 April 1973.

(S) Radar Homing and Warning System (RHAW). CROC 15-71, Radar Homing and Warning System equipment for aircrew recovery helicopter, was submitted by Seventh Air Force in November 1971. This requirement was necessary to afford the HH-53s some protection against the ever increasing exposure to anti-aircraft artillery (AAA) and surface-to-air missiles (SAMs). Basically, the system warned the Jolly Greens of the presence of radar controlled defenses by providing visual and aural alerts to the pilot and co-pilot when threat radar signals from either ground or airborne radar sources were detected. When a signal was detected, the set visually indicated the signal source strength (range) and the relative bearing on a cathode ray

\*UHF radio with Direction Finding (DF) capability.

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tube. The system could identify the types of threat,--AAA or SAM. Based on information from the RHAW equipment, the pilot could take evasive maneuvers. The RHAW system was first introduced aboard the HH-53s in May 1972.<sup>50</sup> By 7 September 1972 All Jolly Greens had RHAW systems installed.

(S) Flares and Flare Launchers. During the 1972 Spring Offensive the NVA introduced a new weapon, the SA-7 Strella [Grail\*] surface-to-air missile.<sup>51</sup> This Russian-built missile was primarily designed for use against low flying aircraft. The missile had an estimated altitude capability of 13,500 [10,000\*] feet.<sup>52</sup> Flare launchers were installed aboard the HH-53s as a method to decoy the SA-7.<sup>53</sup> Each crewmember had the capability of firing the flares.<sup>54</sup> Additionally, each HH-53 carried flare guns. The decoy procedure used by the HH-53s against the SA-7 proved effective since several Jolly Greens were fired on, but none were lost to the SA-7.

#### HH-43 (U)

(S) The HH-43 Pedro continued to be used for the LBR mission in SEA. Slower and smaller than the HH-53, its use in combat rescues was restricted to those missions which occurred within its relatively short operating bases.<sup>55</sup> The ineffective fire suppression kit carried by the HH-43 was used infrequently. In the Spring of 1973, Headquarters USAF, based on recommendations by ARRs, suspended the firefighting role of Pedro.<sup>56</sup> No major subsystem modifications or additions were made to the HH-43 during this reporting period.

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\*Corrected designation provided by Hq PACAF/IN.

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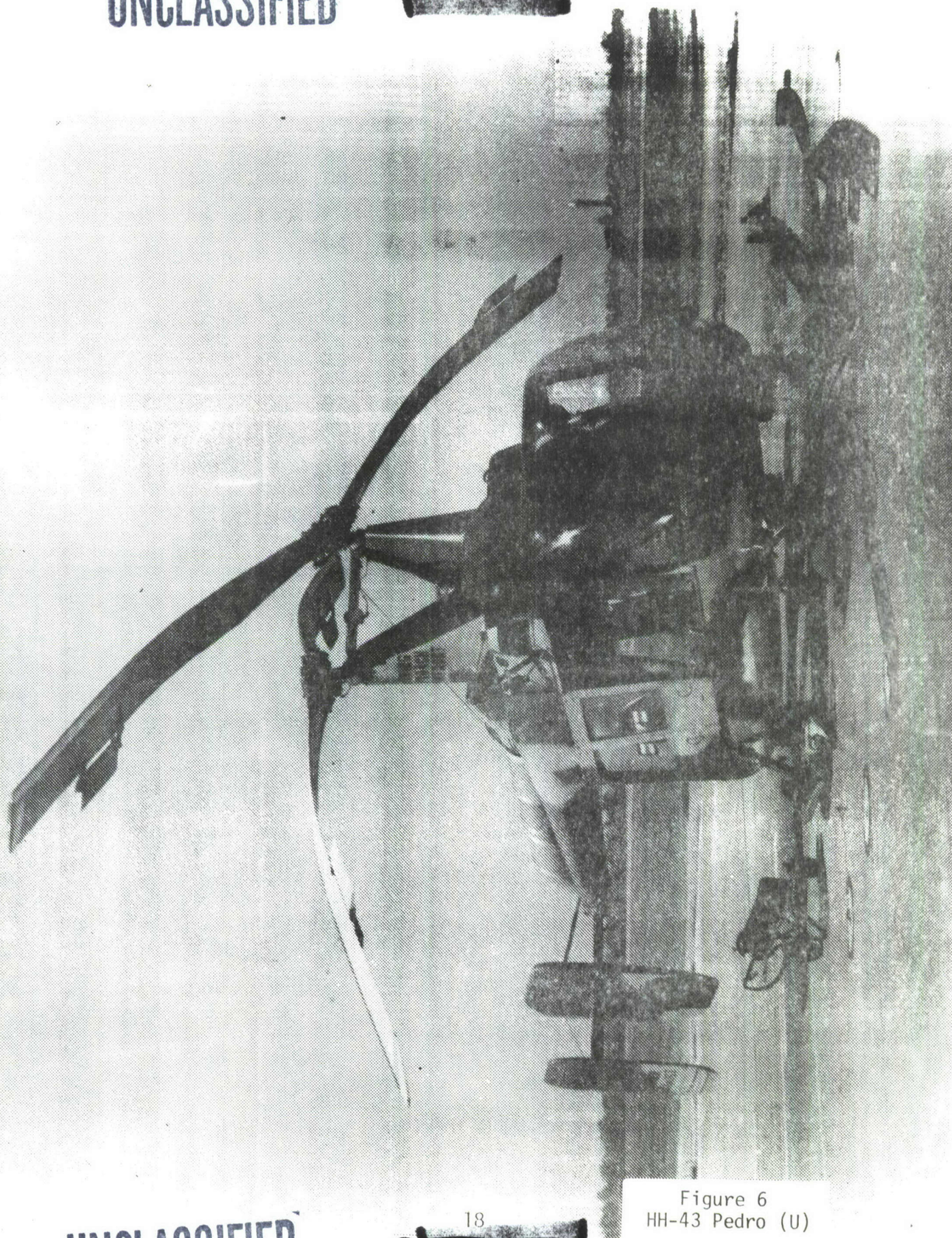


Figure 6  
HH-43 Pedro (U)

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HC-130P (U)

(U) King, the four-engined HC-130P turboprop, provided the communications link between the appropriate RCC (or the JRCC) and the SAR operation. These aircraft flew prepositioned orbits and carried the Airborne Mission Commander who coordinated requests for ordnance and controlled the flow of the various aircraft to the On-Scene Commander (OSC) for his use in neutralizing enemy defenses.<sup>57</sup> To provide the communications capability, the HC-130 was equipped with HF, VHF, and FM radios. The HC-130P also served as a tanker to refuel the Jolly Greens, thus providing the helicopters a theoretically unlimited operational capability.<sup>58</sup> The crew of the King included two pilots, a navigator, a radio operator, two flight engineers, and a loadmaster.

HC-130P Subsystems (U)

(S) During this period the ALE-20 flare system was installed aboard the HC-130Ps to give them some protection against the SA-7. The only other major subsystem modification for the HC-130 was still pending at the completion of this report. CROC 4-72, an electronic countermeasures (ECM) and RHAW system for the HC-130P, was submitted by Seventh Air Force on 25 February 1973. Headquarters USAF approved the RHAW portion, but disapproved the ECM portion. Seventh Air Force declined to appeal the disapproval. As of this writing, no specific equipment had been identified to satisfy the RHAW requirement.<sup>59</sup>

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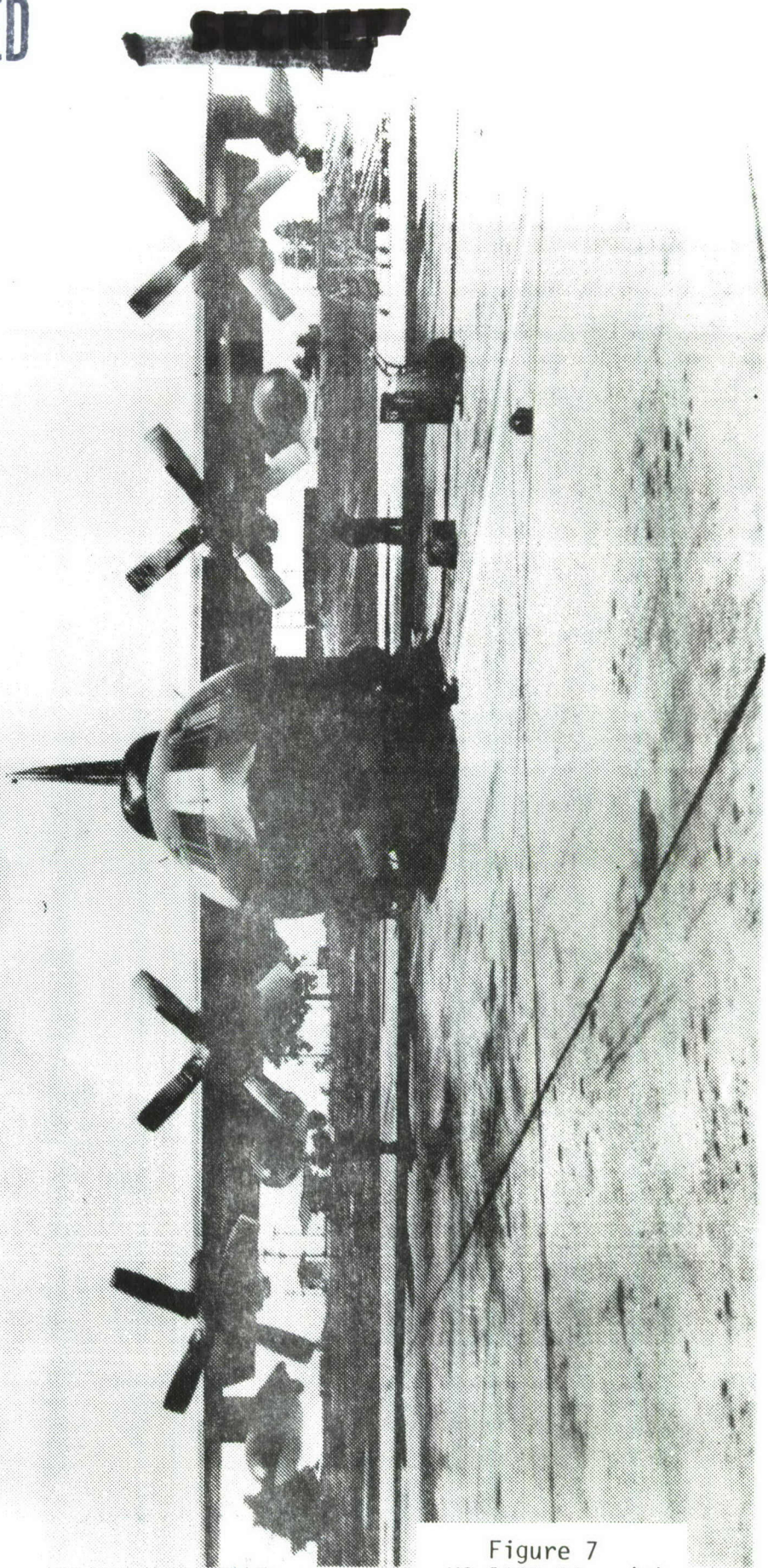


Figure 7  
HC-130P King (U)

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RESCORT and FAC Aircraft (U)

(U) Several aircraft not assigned to the ARRs played an indispensable role in the SAR operation. The Search and Rescue Task Force (SARTF) was composed of numerous aircraft including the A-1, A-7D, and OV-10.

(C) A-1 Sandy.<sup>60</sup> Until 28 October 1972, the A-1 was the primary RESCORT aircraft. The advantages and disadvantages of the A-1 have been presented in several previous CHECO SAR reports. Both the A-1E and A-1H were used in SAR operations, but the A-1H, a single place version, was preferred<sup>61</sup> because of better pilot visibility. The U.S. policy of Vietnamization called for the transfer of all A-1s to the Vietnamese Air Force (VNAF) before the end of 1972, thus a new RESCORT aircraft had to be found. The A-7D was the aircraft assigned to provide the needed capability.

(S) A-7D Sandy. Much preparation went into the integration of the A-7 into the RESCORT role. In August 1972, the Commander-in-Chief, Pacific Air Forces (CINCPACAF), requested Seventh Air Force to review<sup>62</sup> TAC Test 71A-1225, dated August 1971. This document presented the results of flight tests of various aircraft, one of which was the A-7D, in the RESCORT role. The 56th SOW evaluated the results and concluded<sup>63</sup> that the A-7 could perform the RESCORT mission. Seventh Air Force<sup>64</sup> prepared a plan to replace the A-1 with the A-7D over a six-month period.

(C) An A-1/A-7 SAR conference was held from 31 October to 2 November 1972. Its purpose was to review the A-1 mission and the problems of replacing the A-1 with the A-7. By bringing the A-1, A-7, and other rescue personnel together, Seventh Air Force hoped to reduce the transition time, as well as minimize transition difficulties.<sup>65</sup>

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(S) Seventh Air Force fraggd 12 A-7 aircraft daily for SAR training missions beginning 2 November 1972.<sup>66</sup> A technique used during this training period was to have qualified A-1 pilots from NKP RTAFB and Seventh Air Force/Thirteenth Air Force staff officers from Udorn RTAFB aboard the Jolly Greens to critique the A-7 performance.<sup>67</sup> Tactics were developed and by the third training flight the helicopter pilots were satisfied with the A-7 RESCORT tactics.<sup>68</sup>

(S) On 18 November 1972, A-7 aircraft from the 354th TFS participated in the recovery of two downed crewmembers in North Vietnam. (See Bobbin 05 narrative, pages 42-47.) Many mistakes were made as a result of the short training period of approximately two weeks, but the A-7 had successfully replaced the A-1.<sup>69</sup>

(S) Nevertheless, the A-7D had major weaknesses in the RESCORT role. Amongst these was the relatively short loiter time of one and one-half to three hours for the A-7 versus five hours for the A-1. This problem was somewhat alleviated by using in-flight refueling.<sup>70</sup> Additionally, the A-7's speed was not compatible with the Jolly Green's, thereby making it difficult for the A-7 pilot to keep visual contact with the helicopter.<sup>71</sup> The 3d ARRGp tried several techniques to solve this problem, including luminescent paint on the rotor blades and a strobe light located outside the helicopter. None were satisfactory. The 3d ARRGp planned tests of a smoke generating system in July 1973.<sup>72</sup> Another problem created by the A-7's speed was the inability to provide continual protection for the Jolly Greens. This was solved by using a rolling wheel (actually elliptically

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Figure 8  
A-1 Sandy and HH-53 (U)

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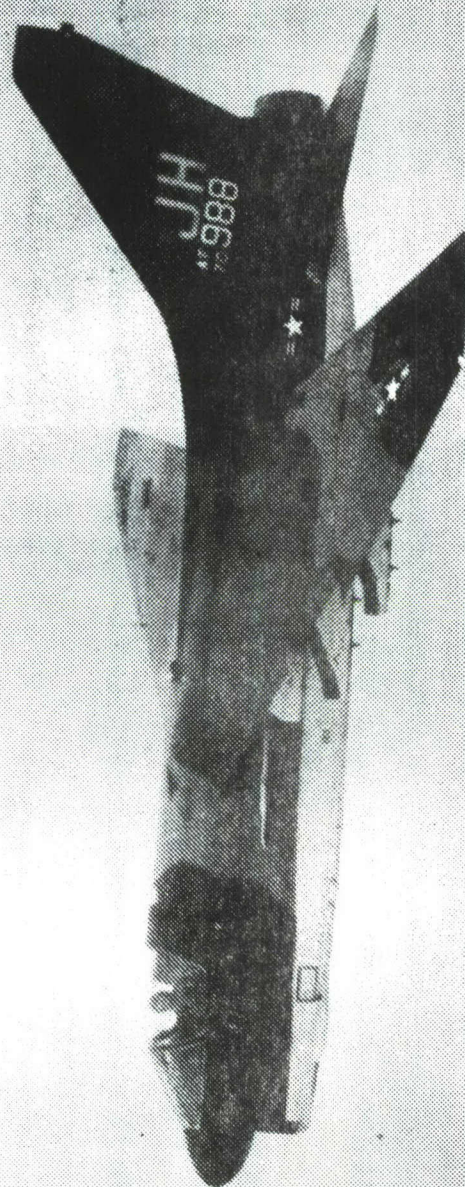


Figure 9  
A-7D Sandy (U)

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shaped) pattern around the Jolly Greens. With two or more A-7 aircraft<sup>73</sup> flying this pattern, the Jolly Greens had continual protection.

(C) Counteracting its weaknesses, the A-7 had numerous advantages over the A-1. The A-7's higher speed increased its survivability and reduced the time it took to reach a rescue area. A computerized navigational system improved navigation capability and also provided the ability<sup>74</sup> to mark and store coordinates of the downed airman's exact location.

(S) Other desirable characteristics of the A-7 include armor plating, self-sealing fuselage fuel tanks, radar altimeter, UHF-DF homing equipment, forward looking radar with terrain avoidance, and inflight refueling capability.<sup>75</sup> CROC 31-72 was submitted on 27 November 1972 by Seventh Air Force to equip 24 A-7s with the ELF system.<sup>76</sup> The CROC was staffed by Air Force Systems Command but at the close of the report no decision had been reached on ELF installation.

(S) OV-10. The OV-10 continued to be the primary Forward Air Controlled (FAC) aircraft for SAR operations.<sup>77</sup> As the number of A-1s was reduced, the role of the OV-10 expanded. The 56th SOW developed a plan whereby the OV-10 and A-1 were used concurrently in the SAR role, thereby<sup>78</sup> reducing the number of A-1s required to support the SAR effort. The OV-10 provided valuable assistance during a SAR attempt because the OV-10 pilots were familiar with the terrain over which they worked, the enemy locations, and the location of the downed crewmembers. The Pave Nail OV-10, equipped with a Pave Spot\* system, also proved to be a powerful

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\*A night observation device with bore-sighted laser range designator.

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asset to the SARTF. The Pave Spot system used a laser to mark targets<sup>79</sup> and to determine slant range and heading. Using this equipment the Pave Nail identified survivors, located their position, led SAR aircraft<sup>80</sup> to the survivors, and called in air strikes to suppress enemy activity.

Rescue Combat Air Patrol (RESCAP) Aircraft (U)

(C) The RESCAP force comprised all additional tactical resources that were employed during a SAR effort. Since each SAR operation was different, the RESCAP composition varied widely, primarily dictated by the enemy's reaction to the SAR attempt. Chapter IV of this report provides a more detailed description of RESCAP force composition.

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Figure 10  
OV-10 Bronco (U)

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CHAPTER III  
PERSONNEL (U)

Manning (U)

(U) During the period 1 April 1972-30 June 1973, large changes in manning were caused by the withdrawal of U.S. forces from SEA, the reduction of the number of SAR units, and the reorganization of the 3d ARRGp. Personnel assigned to the 3d ARRGp dropped from 75 to 38 by 1 May 1972 and from 38 to 16 by 20 August 1972.<sup>81</sup>

(U) Personnel shortages during this reporting period were generally temporary, with some shortages and overages caused by the withdrawal from RVN. The most significant personnel problem of the period occurred during the North Vietnamese 1972 Spring Offensive. During this period all SAR units were required to carry an increased mission commitment and to simultaneously comply with the directed reduction in personnel and equipment related to U.S. withdrawals from RVN. Many staffs and aircrew positions were filled with TDY personnel from the CONUS and overseas rescue units during this period.<sup>82</sup>

Training (U)

(U) The SAR units continued to maintain aircrew training programs during this period. Of particular note were the training programs associated with Pave Imp and ELF, the A-7's assumption of the Sandy role, and two continuing programs: PACAF Jungle Survival School (JSS) and informal training conducted by SAR personnel.

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(U) Pave Imp and ELF Training. HH-53 pilots continued to receive both upgrade and proficiency training in the use of Pave Imp and ELF. Operational commitments often limited the training that could be conducted.<sup>83</sup> Night training areas, as outlined in the previous CHECO SAR report, continued to be used with Camp Hunky\* being the primary training site.

(S) A-7 Training. Training of A-7 pilots to assume the Sandy role was an intense program.<sup>84</sup> This training program called for the A-7 to replace the A-1 over a six-month period.<sup>85</sup> In late October 1972, the strong possibility of a cease-fire necessitated the rapid transfer of certain assets to the South Vietnamese. Among these assets were A-1 Sandies.<sup>86</sup> This turn of events meant that the A-7 pilots had to be trained, as quickly as possible, to assume the vital Sandy role. As was previously pointed out in this report, Seventh Air Force fragged 12 A-7s daily for training with HH-53s.<sup>87</sup> On 16 November 1972, only 14 days after A-7 training had begun, the A-7 participated in the recovery of a downed F-105 pilot.<sup>88</sup> The rapid and successful transfer was a result of some innovative techniques as well as the intense training schedule. One highly successful training technique was to place a qualified A-1 pilot aboard the Jolly Green helicopter so that he could critique the A-7 pilot.

(U) PACAF Jungle Survival School. Since April 1965, all aircrew members enroute to a combat assignment in SEA, with the notable exception

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\*A training area located 37 miles southwest of NKP RTAFB.

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of B-52 crews, have been required to attend JSS at Clark AS, Philippines. This concentrated training school teaches the crewmembers survival, evasion and escape (E&E), and resistance techniques. The student is also taught SAR procedures that he can expect during a rescue and the responsibilities of a downed airman during SAR operations. The four-day school consists of both academic and practical field training.

(C) The training provided by the JSS continued to receive accolades from rescued survivors. Such training was a vital link for a successful rescue. If the downed airman is not properly trained to assist the rescue forces, no amount of effort by the SAR force will help.

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(C) Informal Training. Personnel assigned to SEA rescue forces continued to make informal visits to all theater combat units to describe the capabilities and limitations of SAR forces, as well as the responsibilities of downed airmen. These teams discussed the latest SAR equipment and techniques. Additional SAR information was also provided by each combat unit's life support section and by mission briefings. A continuing effort was made to keep each combat crewmember updated on recent developments.

(C) Joint SAR Exercises. In addition to the A-7/HH-53 training previously discussed, joint exercises were conducted by the HH-53s, AC-130 Gunships, and OV-10 Pave Nail FAC aircraft. Such joint training exercises produced new techniques and procedures that were evaluated for inclusion into SAR combat rescue procedures.

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Awards and Decorations (U)

(U) Personnel assigned to SEA rescue forces continued to receive awards and decorations at an impressive rate. During the period covered by this report the following decorations were awarded:

Air Force Cross	3
Silver Star	67
Distinguished Flying Cross	231
Bronze Star	105
Airmen's Medal	6
Air Medal	1,300
Air Force Commendation Medal	85
Purple Heart	11

During this 15-month period 1,808 awards and decorations were won by SEA rescue personnel. Since January 1966 almost 17,000 individual awards and decorations have been presented these rescue crewmen. On 17 May 1972, General John W. Vogt, Commander, Seventh Air Force, presented the 3d ARRGp its third Presidential Unit Citation. <sup>94</sup> This award recognized the heroic services performed by the Group from 1 February 1969 to 30 April 1970.

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## CHAPTER IV OPERATIONS (U)

### SAR Alert Posture (U)

(C) The alert posture of SAR forces during this period varied with the tempo of USAF combat activity. Numerous changes occurred, but by May 1973 the alert forces for SAR-dedicated aircraft were:

1. HH-53C. One HH-53C was maintained on alert during daylight at both Ubon and NKP RTAFBs with a 15-minute reaction time. One HH-53C maintained night alert at NKP with a 45-minute reaction time.
2. HC-130P. One HC-130P was frugged daily for airborne orbit during daylight hours. Additionally, a supporting HC-130P tanker was maintained on alert at Korat RTAFB with a 30-minute reaction time during the day and a 45-minute reaction time at night.
3. A-7D. Four A-7D Sandies from 3d TFS were kept on 15-minute alert at Korat during the day.

### Responsibilities (U)

(S) The JRCC was the controlling and coordinating agency for all SAR activity in the Seventh Air Force area of responsibility. It was under the command of the 3d ARRGp and was manned on a full time basis by qualified rescue controllers.

(S) The AMC was the communications and control extension of the JRCC. The AMC was the aircraft commander of the HC-130P (King) aircraft. Responsibilities of the AMC included appointing the on-scene

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commander, obtaining forces required for recovery operations, providing long range communications, and controlling communications discipline. His responsibilities also included providing navigational information and intelligence to the SARTF, as well as monitoring weather. Although the AMC aircraft had the capability of refueling the Jolly Greens, this was normally done by another King aircraft because of the complexity of controlling a SAR mission and refueling aircraft simultaneously.<sup>97</sup>

(S) Often the initial OSC was a FAC who was near the area where the survivors went down, but the FAC was generally replaced by the aircraft commander of the lead Sandy aircraft when it arrived. The OSC had command and control of the mission in the rescue area. He was responsible for locating the survivors, determining the need for suppression of enemy defenses, deciding when to make the rescue attempt, and escorting the Jolly Greens during ingress, pick-up, and egress.<sup>98</sup>

(S) Blue Chip coordinated with the JRCC on SAR missions requiring TACAIR support. Blue Chip and its airborne extension, the Airborne Battlefield Command and Control Center (ABCCC), would divert and/or launch aircraft to support the SAR mission.<sup>99</sup>

(S) The function of RESCORT aircraft was to assist the OSC in locating survivors, suppressing enemy defenses, and escorting the Jolly Greens.<sup>100</sup> The responsibility of RESCAP aircraft was to provide continuous protection for the downed airmen and the SAR forces. This included protection from SAM, AAA, and enemy aircraft.<sup>101</sup>

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Procedures (U)

(U) Seventh Air Force Manual 64-1, Search and Rescue - Southeast Asia, dated 23 April 1973, contained the basic procedures to be followed by the SARTF. This manual emphasized that SAR procedures have matured since 1964, but also points out that each rescue effort is a unique situation that requires rapid decisions. <sup>102</sup>

(S) Although there was some variance, most SAR missions could be divided into three phases: search, suppression, and rescue. <sup>103</sup> Upon learning of a downed crewmember, the FAC usually initiated the first phase by notifying the AMC that an aircraft had been downed. The AMC appointed the FAC as temporary on-scene commander. The FAC began a search for survivors, and the AMC notified the JRCC of a possible SAR operation. If there were some positive signs of an objective, such as beacon signals or voice contact with the survivor, the JRCC would launch SAR forces. The JRCC sent one officer and one NCO to Blue Chip for coordination, and contacted intelligence, weather, and other agencies as required. The JRCC informed the AMC of pertinent data such as enemy defenses in the SAR area and best ingress and egress routes.

(S) Two SAR elements, each consisting of one HH-53 and three A-7s, proceeded toward the SAR area. One element flew low and was the primary rescue force, the second element flew high or back-up. Additional A-7s and Jolly Greens were launched as required. When the SAR force arrived, the AMC appointed the low element lead Sandy, Sandy 1, as OSC replacing the FAC. The Jolly Greens orbited near the rescue area out of range of

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enemy defenses and were protected by the high Sandys, Sandy 4, 5, and 6. The low Sandys, Sandy 1, 2, and 3, and the FAC continued to search until the downed airmen were located.

(S) When both the survivors and enemy defenses were pinpointed, the OSC, through the AMC, requested support to suppress enemy activity in the area. Thus, the suppression phase was initiated when the AMC requested support from the JRCC and ABCCC. The JRCC and Blue Chip coordinated on the needs and availability of aircraft. Then Blue Chip and ABCCC diverted and launched aircraft to support the SAR mission. After tactical air arrived and began providing protection in the SAR area, the OSC determined when to attempt the pick-up, and the rescue phase began.

(S) Prior to the pick-up attempt, high Sandy lead, Sandy 4, proceeded from the helicopter orbit point to the objective area to concurrently select ingress and egress routes. After the necessary briefings, the low Jolly Green, escorted by the Sandys, proceeded to attempt the survivor pick-up. Ground fire suppression, if necessary, was accomplished by both the Sandys and the Jolly Greens. Once over the downed crewmember, the aircraft commander of the rescue helicopter became the OSC. A helicopter mechanic gave the Jolly Green pilot hover information to properly position the helicopter over the survivor. The jungle penetrator was lowered and the survivor was brought aboard the aircraft. The Jolly Green then began his egress. Sandy 1 resumed OSC and the Sandys escorted the helicopter from the pick-up area, suppressing enemy defenses as necessary. Smoke screens, layed by the Sandys, were used

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as the situation dictated. Normally the rescue forces returned to their departure point. However, many factors influenced this decision.

#### First Light SAR Effort (U)

(S) Because of the advantages of surprise and economy of forces, first light SAR efforts were often employed. Frequently, aircrews were downed during darkness and night rescue was not feasible, thus first light SAR was necessary to recover these crewmen as quickly as possible. To accomplish the first light SAR, rescue forces were dispatched prior to dawn to arrive at the objective area before first light. As soon as enough light was available, an effort was made to rescue the survivor. <sup>104</sup>

#### Survivor Procedures (U)

(S) The downed airman played a crucial role in his own recovery. The survival equipment carried by crewmembers was an essential element in the SAR mission. Normal equipment included two survival radios, with a sufficient supply of replacement batteries and an earplug, and an acoustic coupler, to provide a simple earphone and mouth piece for the radio. The survivor also carried a signal mirror, at least two Mark 13 signal flares, a gyro-jet pencil flare launcher, an infrared (IR) strobe light, and a compass. <sup>105</sup>

(S) Usually a survivor spent the first 15 minutes on the ground in evasion. After a suitable hiding place was found, the aircraft commander of a multi-member crew would initiate a roll call to determine the condition of each crewmember. It was important for downed crewmembers to refrain from transmission, except when specifically instructed to do

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so by a SAR aircraft, or when urgent information had to be passed to the rescue forces. When these rules were violated, mass radio confusion  
106  
existed.

(S) The survivor and the Sandy aircraft guided the rescue helicopter to the survivor's location. The Sandys marked the location with white phosphorus at points short of the survivor and beyond. The Sandys would also instruct the survivor to ignite the Mark 13 flare (usually when the Jolly Green was about two miles from the survivor). The rescue helicopter used the smoke and voice directions from the survivor to locate his position. The final responsibility of the survivor was to properly place  
107  
himself on the penetrator and give the "up" sign.

#### Radio Communications (U)

(C) Because there were many SAR elements using only a few radio channels, Seventh Air Force established a priority communications system  
108  
to be used by SAR forces. The system was as follows:

<u>Radio</u>	<u>Priority</u>	<u>User</u>
Primary UHF (Preset)	1	OSC, Survivor, Jolly, King
Primary FM (Manual)	2	Sandys, Jolly, King
Discrete UHF (Manual)	3	King, Ground Control Stations, Support Flights
Secondary FM (Manual)	4	Used as necessary
Back-up UHF (Preset Channel 1)	5	Used as necessary

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Accomplishments (U)

(S) From 1 April 1972 to 30 June 1973, SAR forces in SEA were credited with 365 combat saves and 120 non-combat saves. <sup>109</sup> Since 1966, SEA rescue forces have been credited with 2,713 combat saves and 1,253 non-combat saves. This is a combined total of almost 4,000 saves.

(U) The story of SAR is a complicated one as evidenced by the many organizations and types of equipment involved. To best show the interaction of these diverse elements and to demonstrate the important aspects and developments in SAR between 1 April 1972 and 30 June 1973, a number of SAR missions are summarized in the following mission narratives.

Mission Narratives (U)

(S) Bat 21. On 30 March 1972, the NVA began a major invasion of SVN. Three days after this invasion began, an SA-2 SAM downed Bat 21 (an EB-66) in Military Region I. Seventh Air Force established a "no fire zone" 27 kilometers in radius encompassing most of the 3d Army of the Republic of Vietnam (ARVN) area of operation (AO) and launched a massive SAR effort. <sup>110</sup>

(S) This immense SAR effort, involving many different organizations, lasted from 2 April to 13 April 1972 and employed as many as 90 aircraft per day. During the SAR mission, two OV-10 FACs were lost to SA-2 missiles, and heavy small arms fire destroyed Jolly Green 65 of the 37th ARRSq, killing all six crewmembers. <sup>111</sup>

(S) After the 11-day SAR effort, the Bat 21 crewmember was rescued by a U.S. Marine team which arranged to secure the crewmember while he

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was floating down the Cam Lo River in a Sampan. They transferred the crewmember to an armored personnel carrier which took him to a helicopter landing zone for evacuation to Da Nang. 112

(S) The success of the mission in rescuing the crewmember was shadowed by the loss of life, the expenditure of resources, and the criticism that the prolonged no fire zone designation gave an important advantage to the NVA. Major David A. Brookbank, 3d ARVN Liaison Officer Advisor, was on the scene during the rescue attempt. Major Brookbank 113 reported that:

(S) With three enemy divisions plus heavy artillery striking the AO, the 3d ARVN was unable to return fire or request TACAIR in the area. Some specific targets were struck after considerable delay in obtaining clearance. In my opinion this gave the enemy an opportunity unprecedented in the annals of warfare to advance at will. . . . This operations cost the 3d ARVN dearly in not being able to fire at known targets of urgent tactical importance. 114

Major Brookbank added: (U)

(S) Another SAR no fire zone was further northeast. . . . U.S. advisors on the bridges (in the area) could observe the tanks coming south but were unable to fire into the Seventh Air Force zone. After the zones were terminated, the enemy was already south of the Cua Viet and Mieu Gang rivers in strength.

(S) The Bat 21 operation demonstrated that circumstances on the battlefield dictate the amount of effort that should be diverted to a SAR mission. Brigadier General R. G. Cross, Jr., USAF, Deputy Director of Air Operations, MACV commented: 115

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(S) I believe that it is a definite morale factor that every person that flew over here felt that if he was to go down that there was some chance he would be rescued. However, I feel also that there was a tendency on the part of the aircrews to expect that they must be rescued above the requirements of the battle situation at any one time and as airmen or soldiers or sailors we should expect that there are times when as one person we must be sacrificed for the overall.

(S) Part of this controversy suggested that survivors must accept additional burdens during extended SAR missions. Maximum use of E&E procedures was a must. Downed crewmembers could not expect to be rescued in a short period of time if they were in a hostile environment. They would have to employ the techniques taught in survival school. 116

(U) Oyster 01. Flying an F-4 (call sign Oyster 01) on 10 May 1972, Major Robert A. Lodge and Captain Robert C. Locher shot down their third MIG. Shortly thereafter, they were shot down by another MIG approximately 40 miles west of Hanoi. Although the pilot, Major Lodge, was never recovered, Captain Locher, the weapons system operator, was rescued after 23 days of E&E in North Vietnam. During the E&E, Captain Locher subsisted on fruits, nuts, berries, and an ample supply of water. Captain Locher stated: 117

(U) One day I eyed a banana tree all day. It didn't have any bananas on it, but remembered I could get water out of it. Just before evening I stuck a hole in it and got myself three pints of good banana water.

He was also able to obtain various vegetables by raiding native gardens. Captain Locher continually changed his position in search of cover, food, and water. He moved a total of 15 miles, but he was unable to make contact with any U.S. aircraft. On 1 June, Captain Locher heard U.S. airplanes conducting bombing missions. He knew that when the bombing ended, the

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planes would egress the target area, and he might be able to contact them. He successfully made radio contact, and a search and rescue operation was initiated. However, the first SAR attempt was driven off by MIGs.

(U) The next day a SARTF consisting of Jolly Greens from the 40th ARRSq, HC-130 King aircraft, and A-1 Sandys from the 56th SOW, covered by F-4 Phantoms and F-105 Thunderchiefs, began the second SAR attempt. Heavy ground fire was encountered on the way to and from the rescue area which was located deep within the NVN heartland. With the Jolly Greens orbiting, the Sandys made several passes over the area. They then led a Jolly Green commanded by Captain Dale E. Stovall to a position over Captain Locher. Automatic weapon fire erupted from a nearby building, but was silenced by the miniguns on the Jolly Green. The flight engineer lowered the jungle penetrator and Captain Locher climbed on. Captain Locher stated, "It sure is a good feeling to get that penetrator, strap it on, give them a thunbs-up and hang on." <sup>118</sup> Captain Locher was brought on board and the helicopter began the long trip home.

(U) During the return trip, the task force encountered enemy fire from villages, trucks, and a train. One A-1 Sandy from the 1st Special Operations Squadron (SOS) of the 56th SOW, attacked the train using bombs, <sup>119</sup> 20mm cannons, and rockets. The pilot stated that:

(U) There was a pretty good gunner firing tracers up on either side of me as I went in. I finally put two rockets into the engine and the steam shot up about 300 feet. It was a beautiful sight.

Other Sandys made passes along the train and left all of the cars burning or destroyed.

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(S) Bobbin 05. On 16 November, Bobbin 05, an F-105G Wild Weasel with Captain Kenneth D. Thaete as pilot and Major Norbert J. Mair as electronic warfare officer, was shot down by a surface-to-air missile over North Vietnam. During the ejection sequence and subsequent landing, Captain Thaete suffered facial burns and a wrenched leg. Major Mair severely bruised his right thigh, sprained the right side of his back, and injured his right arm. Shortly after reaching the ground, both crewmen camouflaged their extra survival equipment, went into hiding, and attempted to contact U.S. aircraft on their survival radios. Although Major Mair and Captain Thaete did not know it, SAR forces had already been alerted by other members of the Bobbin flight.

(S) Major Mair and Captain Thaete were unable to make radio contact with friendly forces until approximately 0500 on 17 November when they reached two F-4 Fast FACs. The RCC at Nakhon Phanom ordered the 354th TFW to launch A-7 Sandys which were on 15-minute ground alert. The weather in the rescue area was 1,000 foot overcast, and the two downed crewmembers were situated in terrain characterized by rugged mountains and deep valleys. The weather did not clear, and the survivors were told that a pick-up would be attempted the following day.

(S) Enemy defenses near the rescue area included three known SAM sites, and numerous AAA sites with 85 and 100 millimeter radar controlled guns. Considering the heavy enemy defenses, the JRCC decided to launch a first light SAR effort. A myriad of details were worked out including the composition of the SARTF, ordnance, and the responsibilities of 16

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A-7 Sandy aircraft. The Search and Rescue coordinating officers from the 354 TFW and the Jack RCC staff worked through the night arranging support aircraft, planning ingress/egress routes, selecting orbit points, scheduling tanker support, and preparing briefings. Included in the SARTF, in addition to the Jolly Green/A-7 Sandy team and the HC-130 Kings, were F-4 Anti-MIG Combat Air Patrol (MIGCAP), F-4 Gunfighters, F-105 Wild Weasel SAM suppressors, EB-66 Electronic Intelligence aircraft, and KC-135 tankers.

(S) On 18 November, the general planning of briefings and the mission data packages were completed. Briefings were held and pertinent information distributed. Sandys 01 through 05 were launched at 0358 hours, Sandys 11-16 launched at 0434 hours, and Sandys 08 and 09 launched at 0608 hours.

(S) Contact was made with Bobbin 05B (Major Mair), but there was initially no contact with Bobbin 05A (Captain Thaete). However, on a pass over the survivors' area, Sandy 01 and Wolf 01, a Fast FAC, made contact with both crewmembers. Attempts were made to find routes for the helicopters to ingress/egress through the weather and mountains, but these attempts were unsuccessful. The first light effort was abandoned, and Sandy forces began recycling through the tankers.

(S) Tanker support was a serious problem because the tankers on station were becoming fuel limited. Several Sandys rendezvoused with tankers which already had F-4s and F-105s waiting to refuel. At one time, 16 fighters were waiting to receive fuel from one tanker. The tankers responded by allocating fuel as equitably as possible, providing information about other tankers in the area, obtaining permission to go

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below Bingo fuel\* or to land at other than home bases, and requesting that the appropriate agencies launch all available tankers.

(S) Sandy 01, the OSC, had found an ingress route from the coast to the survivors. Because of heavy AAA fire, the helicopters could not reach Major Mair and Captain Thaete along this route. Sandy 01 led Sandy 04 and 05 over the route to familiarize them with the area. Sandy 04 and 05 backtracked to the helicopters' orbit area and tried several times to get at least one helicopter through the clouds and into a valley for a pick-up run. These attempts failed. The helicopters, using radar altimeters, descended until they were 500 feet above ground level (AGL), but were still in the clouds and had to climb back up.

(S) The aircraft were getting low on fuel again. The Sandys and Jolly Greens refueled using the increased numbers of tankers that had become available. Sandy 01 had been airborne over six hours, flying in bad weather, over rugged mountain terrain, and through heavy enemy defenses. Major Clarke, a Sandy pilot, remarked:

(S) I guess the adrenaline took a pump break about this time, because I realized how tired I was getting and how good a sandwich would have tasted right then. All I had was my water bottle which was almost empty. I knew that if the next effort failed again, we were through for the day.

(S) The Jolly Green and Sandy force refueled from King and KC-135s respectively. Sandys 01, 04, and 05 proceeded to the helicopter orbit point. Sandy 01 escorted Jolly 03 in an attempt to find an ingress route.

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\*A predetermined fuel quantity at which an aircraft returns to base.

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Sandys 04 and 05 proceeded on top of the clouds to the Gulf of Tonkin, went under the clouds, and ingressed to the survivors' position. Sandys 04 and 05 received a barrage of AAA, and it took two attempts for them to reach the objective area. They then had to backtrack from the survivors towards the Jolly Green's orbit, hoping to intercept Sandy 01 and Jolly 03 and lead them to the survivors. Sandys 02 and 03 rendezvoused with Sandys 11-16 and proceeded to the coast to try to break under the weather. Sandy 01 and Jolly 03 proceeded eastward above the overcast. Sandy 01  
121  
remarked:

(S) I asked him (Jolly 03) how low the ground was under him. He said he was in a valley, so I punched down into the stuff. . . . when I got under him and broke out underneath, I was in a valley, sure enough.

(S) Captain John M. Gillespie, the aircraft commander of Jolly 03  
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stated: (U)

(S) Circling the valley, with a 1,000 foot or less ceiling Major Clarke used his direction finding equipment to vector my aircraft into the valley. The two aircraft, an A7D and an HH-53, then began the long run inbound to the survivors. Originally the route was 27 miles long, but due to low ceiling and obscured mountain ridges, the run in went up and down valleys covering about 45 miles. During the run in, Major Clarke displayed great skill and courage maneuvering his high speed aircraft between narrow valleys made even narrower by the low clouds. It was difficult for me in a slow flying helicopter to maneuver through the mountains and weather, for Major Clarke it was a fantastic example of bravery and skill.

(S) Maneuvering around villages and other possible enemy defenses, Sandy 01 and Jolly 03 reached the ridgeline where Major Mair and Captain Thaete were located. Sandy 01 flew over the survivors and received ground

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fire near Major Mair's location. Two smoke flights, Sandys 11-13 and 14-16 led by Sandys 02 and 03, made their run in from the coast. By this time, all aircraft were subjected to heavy AAA fire. The flights delivered their smoke perfectly and the smoke screens were effective in shielding the helicopter from the view of the AAA sites. Captain Thaete estimated that each aircraft that passed over him took 40-80 rounds of AAA fire and that the rate doubled during the smoke flight run. Shielded by smoke from the AAA fire, Jolly 03 began the pickup of Captain Thaete and Major Mair. Jolly 03 received small arms and automatic weapons fire and returned the fire using miniguns. The survivors were picked up successfully, but Sandy 01 was hit and had to be escorted to Da Nang. Jolly 03 returned to Nakhon Phanom  
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without incident.

(S) The SAR mission, from the time the first Sandy took off until the last one landed, lasted nine hours. While this mission was being conducted, F-4 and F-105 aircraft were attacking SAM and other radar sites in the area. At least seven different kinds of aircraft were  
124  
involved in the rescue.

(S) Several problems were encountered during the Bobbin 05 mission. These were insufficient initial tanker support, lack of planning beyond a first light effort, poor radio discipline, occasional absence of an OSC in the rescue area, and improper use of the King aircraft. Many of these  
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problems were a result of incomplete training of the A-7 crews.

(S) The Bobbin 05 rescue effort was the first use of the A-7 for a SAR mission. Two characteristics of the aircraft were significant:

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(1) the higher speed increased the survivability of this RESCORT aircraft, and (2) its navigation system was very effective in locating survivors<sup>126</sup> and leading the Jolly Greens to them.

(S) Jackel 33. On 22 December 1972, Jackel 33, an F-111 from Takhli<sup>127</sup> RTAFB, was downed by unknown causes<sup>128</sup> 17 miles southwest of Hanoi.

After several days delay due to weather, SAR forces attempted to rescue the Jackel 33 crew on 27 December during a LINEBACKER II mission. The task force consisted of 13 A-7 Sandys, four Jolly Greens, two HC-130 Kings, and<sup>129</sup> 32 F-4s.

(S) Upon reaching the objective area, Jolly Green 01 began ingress 18 miles from the survivor. With the aid of a smoke screen set up by two Sandys, the Jolly Green reached the rescue area without encountering enemy defenses. As the Jolly Green neared one survivor, enemy gunfire came from all directions. Using miniguns and automatic rifles to engage the enemy, the helicopter hovered over the survivor and dropped the penetrator. The survivor got within five feet of the penetrator but was blown off his feet<sup>130</sup> by the helicopter downwash.

(S) At this time, the copilot of the Jolly Green was wounded and five or six enemy soldiers attempted to run under the aircraft. The helicopter had been in a hover for over 60 seconds and the enemy was still firing from all directions. There was blood all over the cockpit from the copilot's<sup>131</sup> wound. With the situation hopeless, the pilot left without the survivor.

(S) During egress, the aircraft experienced stability and control problems and was low on fuel. An attempt to refuel with King was unsuccessful

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due to damage to the refueling probe. The pilot made an emergency landing in Laos and immediately received fire from nearby villagers. Jolly Green 03 recovered the Jolly Green 01 crew. Attempts to salvage equipment from Jolly Green 01 were unsuccessful due to enemy ground fire, and Sandy aircraft destroyed the downed helicopter.<sup>132</sup>

(S) The Jackel 33 mission was a bitter disappointment because the Jolly Green had come so close to rescuing the survivor. Jolly Green 01 was the 3d ARRG's third and last aircraft loss in combat between 1 April 1972 and 30 June 1973. The other two were lost on the Bat 21 Mission and in a rocket attack at Da Nang.<sup>133</sup>

(C) Spectre 17. On 21 December 1972, Spectre 17, an AC-130 Gunship, was downed over Laos. Because of enemy activity in the rescue area, the crew of Jolly Green 32 decided to attempt a night rescue using the NRS.

(C) After take-off, Jolly Green 32 contacted Spectre 07, who had voice contact with two survivors, and requested that the survivors have their strobe lights with IR covers, radios, and flares ready for immediate use. Using the LLLTV and illumination from the moon, Jolly Green 32 proceeded towards the survivors at 400 feet AGL. The Jolly Green crew detected a strobelight, and as the aircraft turned towards the survivors, the strobe was picked up on the LLLTV. Using the LLLTV, the pilot hovered the HH-53 near the first survivor who was then brought on board.

(C) The Jolly Green began the search for the second survivor. Five minutes later his strobe light was located. As Jolly Green 32 approached the second survivors, the radar altimeter picked up a large tree and the

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aircraft had to climb rapidly. Although the Jolly Green lost sight of the survivor, Spectre 07, using IR equipment, was able to vector the rescue aircraft to the survivor. After lowering a Pararescue Recovery Specialist to the ground to assist the second survivor, the Jolly Green completed the rescue and returned to NKP without incident.

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(C) The Spectre 17 mission was the first combat SAR using NRS. The LLLTV helped the aircrew fly over the uneven terrain and was instrumental in locating the survivor's IR strobe. The excellent illumination from the moon and the assistance of Spectre 07 were also important to the successful recoveries. The aircraft commander of Jolly Green 32, Captain Jerry W. Shipman, gave high praise to the help provided by Spectre 07. He stated in the mission report that:

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(C) The use of the AC-130 aircraft will greatly increase the capability of the NRS aircraft. . . . The combination of an NRS equipped HH-53 and an AC-130 could play an increased role for night rescue operation if a limited training program could be developed.

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CHAPTER V

CONCLUSION (U)

(S) During the period of this report U.S. combat activity in SEA vacillated from the high points of April-June 1972 and December 1972 to limited operations in Cambodia. All rescue forces were moved to Thailand in early 1973. Commanders of rescue units were forced to react to massive demands with constantly decreasing resources. The increased emphasis placed on unit mobility by the ARRS in recent years paid ample dividends during this period.<sup>138</sup> Requests for temporary resources to help provide the required rescue assistance were honored within days. One simple fact stood out during this entire reporting period--downed American airmen could count on the men of the ARRS to exhaust all effort and resources to secure their rescue.

(S) Significantly, no two rescue and recovery attempts were alike. Plans formulated for a recovery operation had to be carefully tailored to cover the specific situation. Therefore, a major requirement for successfully accomplishing a combat rescue was a totally flexible and responsive SARTF.<sup>139</sup> Most of the successful rescue efforts were a combination of the downed airman fulfilling his obligations as well as the SARTF using established rescue procedures.

(S) Most combat rescue attempts, particularly long distance missions, were a never-ending race with time. In most cases, the probabilities for successful recovery of airmen downed in an unduly hostile area were directly related to the amount of time taken to get an effective rescue

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force on the scene. In many cases, too much time was required to build an armada to penetrate enemy defenses and give the SAR force a reasonable chance for success. The speed of the A-7D helped to partially solve this problem.<sup>141</sup>

#### Future Requirements (U)

(S) Based on experiences of SAR in SEA, those involved with SAR missions have noted certain developments in equipment, training, and organization that could prove to be of long range benefit in the development of SAR equipment and procedures.

(S) Equipment. A helicopter has never been designed specifically for combat SAR missions. The 3d ARRGp had two primary objections to the HH-53s: the helicopter was too large and too slow. The group felt that a SAR helicopter should be able to hover at 7,000 feet in air temperature of 90° Fahrenheit and have a forward air speed of 350 knots. The helicopter should be equipped with a NRS and a terrain following/terrain avoidance radar system. This equipment would greatly enhance rescue and recovery capability.<sup>142</sup>

(S) Although the A-7D proved to be satisfactory in the RESCORT role, an aircraft has never been specifically designed for the RESCORT role. (The A-10A close air support aircraft is presently being developed by the USAF and could play an important role in future SAR programs.) The RESCORT aircraft desired by SAR forces should have a speed envelope that includes speeds low enough for helicopter escort and high enough for survivability in heavily defended areas. Additionally, this desired

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RESCORT aircraft should be able to carry a large, variable ordnance payload; have a long loiter time; and have systems equipment comparable to the  
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OV-10 Pave Nail and the A-7D.

(S) Organization. In May 1972 the Air Staff proposed to integrate  
144  
the ARRS into the Tactical Air Command. Although this change never occurred, personnel of the 3d ARRGp felt the issue would be raised again. The opinions of SAR organizational commanders varied from an immediate  
145  
need to come under TAC to no need to change.

#### Future Considerations (U)

(S) Probably the most important consideration for future combat rescue is that the basic knowledge required for future combat SAR is currently available. Undoubtedly, present knowledge will have to be modified, but the loss of life during past SAR missions dictates that the successful com-  
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bat rescue procedures must be preserved. Extensive peacetime training programs are necessary if adequate combat rescue procedures are to be retained. Indeed, the future effectiveness of combat SAR depends on retaining the skills and knowledge gained during search and rescue operations in SEA.

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## FOOTNOTES (U)

1. (S) Ltr, Colonel Cecil N. Muirhead, CC 3d ARRGp, Subj: Clarification of Current SAR Policy and Procedures, 24 May 72, p. 3. (Hereafter cited as Clarification of SAR Policy.)
2. (S) 7th AFM 64-1, Search and Rescue Southeast Asia, 23 Apr 73, p. 2-1. (Hereafter cited as 7th AFM 64-1.)
3. Ibid., p. 1-3.
4. (U) Ulsamer, Edgar, "Air Rescue in Southeast Asia," Air Force Magazine, Oct 72, p. 30. (Hereafter cited as "Air Rescue in SEA.")
5. (S) History, 3d Aerospace Rescue and Recovery Group, 1 Jan 73-30 Mar 73, p. 2-1. (Hereafter cited as 3d ARRGp History with appropriate quarter indicated.)
6. (S) 7th AFM 64-1, pp. 1-1 to 1-2.
7. (S) Report, End of Tour Report, Colonel Cecil N. Muirhead, CC 3d ARRGp, 2 Jan 73, pp. 1-2. (Hereafter cited as Muirhead, End of Tour Report.)
8. (C) Intvw, Lt Col LeRoy W. Lowe, CHECO Historian, with Captain Richard L. Fuller, Information Officer, 3d ARRGp, 4 Apr 72.
9. (S) Muirhead, End of Tour Report, p. 1.
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UNCLASSIFIED

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UNCLASSIFIED

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# UNCLASSIFIED



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# UNCLASSIFIED

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## GLOSSARY (U)

AAA	Anti-aircraft Artillery
AB	Air Base
ABCCC	Airborne Battlefield Command and Control Center
AFB	Air Force Base
AGL	Above-Ground Level
AMC	Airborne Mission Commander (SAR Task Force)
AO	Area of Operation
ARRGp	Aerospace Rescue and Recovery Group
ARRS	Aerospace Rescue and Recovery Service
ARRSq	Aerospace Rescue and Recovery Squadron
ARRWg	Aerospace Rescue and Recovery Wing
ARVN	Army of the Republic of Vietnam
Blue Chip	Seventh Air Force Tactical Air Control Center
CDI	Course Deviation Indicator
CMR	CHECO Microfilm Roll
CINCPACAF	Commander-in-Chief, Pacific Air Forces
CONUS	Continental United States
CROC	Combat Required Operational Capability
CRT	Cathode Ray Tube
Det	Detachment
ECM	Electronic Countermeasures
E&E	Evasion and Escape
ELF	Electronic Location Finder
FAC	Forward Air Controller
Fast FAC	Jet FAC, e.g., an F-4
FIR	Flight Information Region
FM	Frequency Modulation
GOT	Gulf of Tonkin
HF	High Frequency
IR	Infrared
Jack	Call sign for OL-B Rescue Coordination Center
Joker	Call sign for the Joint Rescue Coordination Center
JRCC	Joint Rescue Coordination Center
JSS	Jungle Survival School
King	Call sign for the HC-130P

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LBR	Local Base Rescue
LLTV	Low Light Level Television
LORAN	Long Range Navigation
LNRS	Limited Night Recovery System
MAC	Military Airlift Command
MACV	Military Assistance Command, Vietnam
MHz	Megahertz
MIGCAP	Anti-MIG Combat Air Patrol
mm	millimeter
MR	Military Region
NCO	Non-commissioned Officer
NKP	Nakhon Phanom RTAFB, located in Northeastern Thailand
NM	Nautical Mile
NOD	Night Observation Device
NRS	Night Recovery System
NVA	North Vietnamese Army
NVN	North Vietnam(ese)
OL	Operating Location
OSC	On Scene Commander (SAR)
PAVE IMP	The HH-53 limited night recovery system
PAVE NAIL	The OV-10 PAVE SPOT program expanded to include LORAN
PAVE SPOT	An OV-10 night observation device with boresighted laser range designator
PCS	Permanent Change of Station
PJ	Pararesuce Recovery Specialist
Queen	Call sign for SAR OL-A Rescue Coordination Center
RCC	Rescue Coordination Center
RESCAP	Rescue Combat Air Patrol
RESCORT	Rescue Escort
RHAW	Radar Homing and Warning
ROC	Required Operational Capability
RTAFB	Royal Thai Air Force Base
RVN	Republic of Vietnam
SAM	Surface-to-Air Missile
Sandy	Call sign of A-1 and A-7 SAR aircraft
SAR	Search and Rescue
SARTF	Search and Rescue Task Force
SEA	Southeast Asia
SEAOR	Southeast Asia Operational Requirement
SOS	Special Operations Squadron
SOW	Special Operations Wing
SVN	South Vietnam

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TAC	Tactical Air Command
TACAIR	Tactical Air
TDY	Temporary Duty
TFS	Tactical Fighter Squadron
TFW	Tactical Fighter Wing
TUOC	Tactical Unit Operations Center
UHF-DF	UHF radio with direction finding capability
UHF	Ultra High Frequency
USSAG	United States Support Activities Group
VHF	Very High Frequency
VNAF	South Vietnamese Air Force

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